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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,457	11/19/2003	Norihiko Saito	10517/197	3918
23838	7590	05/05/2006	EXAMINER	
KENYON & KENYON LLP 1500 K STREET N.W. SUITE 700 WASHINGTON, DC 20005			AMAYA, CARLOS DAVID	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/715,457

Applicant(s)

SAITO ET AL.

Examiner

Carlos Amaya

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 14 and 15 is/are rejected.
- 7) ☐ Claim(s) 13 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/03/05, 11/19/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7,14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freeman (US 6,519,539).

With respect to claim 1 Freeman discloses a diagnostic apparatus for a fuel cell (Test fuel cell 90) installed in a moving object as a power source (Figure 1 Portable apparatus 10 for impedance measurement, Column 6 lines 61-62), comprising: an operational control portion (CPU 20) diagnostic portion (Frequency synthesizer 50, Differential amp 120, 130) that diagnoses a state of the fuel cell on the basis of operation of the fuel cell controlled by the operation control portion (CPU 20 inputs information to the frequency synthesizer, this in turns controls a Load bank 100 to draw or to apply voltage to the fuel cell. The Differential amp measure voltage and current drops across the fuel cell); and a power adjustment portion (Load bank 100) that adjusts power obtained from the fuel cell operated by the operation control portion during a diagnosis made by the diagnostic portion (Load bank consumes power generated by the Test fuel Cell 90 or apply power to the fuel cell).

Freeman, however, does not disclose expressly that the operation control portion is connected to a control system installed in the moving object to perform operation

Art Unit: 2836

control of the fuel cell and that performs operation control of the fuel cell by issuing an operational instruction to the control system.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have connected the control portion (CPU 20) to a vehicle's control system to control the operation of the Test Fuel Cell 90 (Column 4 lines 13-18). Freeman discloses that the invention is useful in a vehicle (Column 6 lines 61-65), thus a vehicle has to include a control system for operation of the fuel cell.

The suggestion or motivation for doing so would have been that it would be beneficial to obtain from a vehicle the correct diagnostic of the operating parameters of the fuel cell, and in response to an output from the diagnostic portion, the vehicle's control system performs an operation on the fuel cell.

With respect to claim 2 Freeman discloses the diagnostic apparatus according to claim 1, wherein information on an operational state of the fuel cell is input to the operation control portion via the control system. It would have been obvious to one of ordinary skill in the art to supply the portable apparatus 10, disclose by Freeman, with an operational state of the fuel cell installed in the vehicle via the control system installed on the vehicle.

With respect to claim 3 Freeman discloses the diagnostic apparatus according to claim 2, wherein the diagnostic portion diagnoses a state of the fuel cell on the basis of information on the operational state of the fuel cell which has been input to the operation control portion via the control system. The operational control portion (CPU 20) diagnoses the fuel cell, thus it would have been obvious to one of ordinary skill in

Art Unit: 2836

the art that the diagnostic takes part in response to the operational state of the fuel cell inputted by control system to the control portion (CPU 20). The motivation or suggestion for doing so would have been to obtain parameters corresponding to the fuel cell and according to this parameters a diagnosis on the fuel cell is performed; on Freeman's invention this parameters are inputted via a software program 30.

With respect to claim 4 Freeman discloses the diagnostic apparatus according to claim 1, wherein the operation control portion controls adjustment of power by the power adjustment portion (The CPU 20 and Frequency Synthesizer 50 control the Load bank 100, Column 5 lines 36-38).

With respect to claim 5 Freeman discloses the diagnostic apparatus according to claim 1, wherein the power adjustment portion is connected to an output terminal of the fuel cell and adjusts power by absorbing or consuming power obtained from the fuel cell (Figure 1 Column 5 lines 36-38).

With respect to claim 6 Freeman discloses the diagnostic apparatus according to claim 1, wherein the power adjustment portion is provided with an accumulator portion that can be charged with and discharged of electricity, and adjusts power by charging the accumulator portion with power obtained from the fuel cell. Freeman discloses that the Load bank can be set to apply a desired voltage or draw a desired current, thus its understood that since its applying and drawing power that it can be charged/discharged see also figure 1.

With respect to claim 7 Freeman discloses the diagnostic apparatus according to claim 1, wherein the diagnostic apparatus is separate from the moving object.

Diagnostic apparatus is separate from the Test fuel cell, and as Freeman discloses the mobile apparatus 10 can be used in a vehicle.

With respect to claim 14 Freeman discloses a diagnostic method for the diagnostic apparatus as disclosed in claim 1, one of ordinary skill in the art would have necessarily performed the recited method steps of claim 14 when using the apparatus as disclosed in claim 1.

3. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freeman (US 6,519,539) in view of Aoyagi (US 6,815,100).

With respect to claim 8 Freeman in view of Aoyagi discloses the diagnostic apparatus according to claim 1. Freeman, however, does not disclose expressly that the operation control portion adjusts power by charging an accumulator portion installed in the moving object with power obtained from the fuel cell.

Aoyagi discloses a control device for starting fuel cell vehicle, of a power storage unit 12 (accumulator) for assisting the supply of electrical power to the load and for storing generated energy of the fuel cell (Column 2 lines 34-36).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have an accumulator (Freeman's or Aoyagi) installed in the moving object (vehicle) as disclosed by Aoyagi and expressly disclosed by Freeman.

The suggestion or motivation for doing so would have been to obtain a more reliable diagnostic of the battery by checking its performance on charging an accumulator installed in the vehicle.

With respect to claim 9 Freeman in view of Aoyagi discloses the diagnostic apparatus according to claim 8, wherein the power adjustment portion is a charging system that is installed in the moving object and that can charge the accumulator portion with power obtained from the fuel cell. Figure 1 shows a primary precharger 16, and a secondary precharge portion 17 in charge of the charging of the accumulator (Energy storage 12) from power obtain from a fuel cell 11.

With respect to claim 10 Freeman in view of Aoyagi discloses the diagnostic apparatus according to claim 1. Freeman, however, does not disclose expressly that the power adjustment portion adjusts power by consuming power obtained from the fuel cell by a power-consuming unit installed in the moving object. Aoyagi discloses, In Figure 1 driving motor 13 consumes power generated by the fuel cell installed in the vehicle.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to add a power consuming device to the power adjustment in a moving object (vehicle) as disclosed by Aoyagi.

The suggestion or motivation for doing so would have been to provide power to a power-consuming unit install in the vehicle, which is regulated by the power adjustment portion. For the purpose of providing the driver of the vehicle with certain operations of the vehicle, movement, for example.

With respect to claim 11 Freeman in view of Aoyagi discloses the diagnostic apparatus according to claim 10, wherein the power adjustment portion includes a unit control system that is installed in the moving object to control driving of the power-

Art Unit: 2836

consuming unit consuming power obtained from the fuel cell. Figure shows a unit control system (ECU 18) install in the vehicle for controlling the operation of the fuel cell and power consuming unit (motor 13).

4. Claims 12, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freeman (US 6,519,539) in view of Masayuki (JP 2001-010861).

With respect to claim 12 and 15 Freeman in view of Masayuki discloses the diagnostic apparatus according to claim 1. Freeman, however, does not disclose a fuel gas supply portion that supplies the fuel cell with a fuel gas as a substitute for a fuel gas from the outside of the moving object and a supply system installed in the moving object to supply the fuel cell with a fuel gas serving for power generation by the fuel cell.

Masayuki discloses a fuel cell system in a mobile unit 10 Figure 1, and a fuel cell exchange section 1 for exchanging gas (Paragraph 0039 lines 6-8) in a mother ship (Paragraph 0028 lines 1-3).

It would have been obvious at the time the invention was made to have a fuel gas supply outside the moving object as disclosed by Masayuki and also have a supply gas inside the moving object.

The suggestion or motivation for doing so would have been to have a system that is capable of running on supply of gas on different locations for the purpose of testing the fuel cell without the use of the moving objects gas supply, and to be able supply the fuel cell with different types of gases than the ones supplied by the moving object.

Allowable Subject Matter

5. Claims 13 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. Claim 13 is allowable over the prior art, because the prior art does suggest "a cooling portion that cools the fuel cell as a substitute for a cooling system installed in the moving object to cool the fuel cell".
7. Claim 16 is allowable over the prior art, because the prior art does suggest "a coolant is supplied to the fuel cell from the outside of the moving object so as to cool the fuel cell for the diagnosis".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner's supervisor, Brian Sircus who can be reached on (571)272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**PHUONG T. VU
PRIMARY EXAMINER**